

City of Troy 10 kW Photovoltaic Demonstration

In September 2003, the City of Troy was awarded a \$37,248 grant from the State of Michigan Energy Office to undertake a 10 kilowatt photovoltaic demonstration project. Additional support was provided by the NAC/TARDEC in the amount of \$28,802, by the City of Troy in the amount of \$10,043 and by United Solar Ovonic LLC in the amount of \$21,013.

The purpose of the project was to install, operate, and maintain a 10 kW photovoltaic system for emergency power backup at the Sylvan Glen Public Safety Radio Communications System operated by the City of Troy. This project highlights the value of solar energy solutions for homeland security applications.

After a review of available PV technologies, a building integrated PV design was chosen, which would be in aesthetic harmony with the attractively landscaped setting at the Sylvan Glen site. A local amorphous PV manufacturer, United Solar Ovonic LLC, produces the selected PV material.

This system is an extremely reliable power system for the communication system used by the Troy Fire Department. Major considerations were made in the design process to reduce redundancy, increase reliability, and provide for load expansion. This system accomplishes the following:

- Non-obtrusive, aesthetically pleasing, building integrated, photovoltaic power system that incorporates the unique, Uni-Solar PV shingles.
- Uninterruptible power system that can support the communication equipment indefinitely during a grid power outage.
- A grid-tied photovoltaic power system that effectively reduces or eliminates the amount of utility power required to support the facility.

The system was successfully installed and is performing within expectations.